

**REMARKS**

**DOUBLE PATENTING**

Claims 1, 3-15, 18, 26-31 and 37 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7, 9-20 and 22-29 of Kennedy et al. (US Patent No.: 6956097). The Applicant respectfully disagrees, but submits a terminal disclaimer in this case to remove this rejection.

**CANCELED CLAIMS**

Claims 2, 16-17, 19-25, 32-36 and 38-58 are herein canceled through amendment. The Applicant wishes to note that the cancellation of these claims is directed to having the allowable claims move forward to issue and is not meant to invoke a doctrine of equivalents analysis. The canceled claims will be pursued separately in a divisional application to follow allowance of the current claims.

**35 USC §102**

Claims 1, 3-22, 24, 26-35, 37-39, 41-51, 53, 55, 56 are rejected under 35 USC §102(e) as being obvious over Kennedy et al. (US 6956097). The Applicant respectfully disagrees.

Claim 1 recites:

“An absorbing composition comprising at least one inorganic-based compound, at least one absorbing compound, and at least one material modification agent, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof, wherein the at least one adhesion promoter comprises APTEOS triflate, APTEOS methanesulfonate, APTEOS nitrate, APTEOS nfbs, ammonium triflate, ammonium nfbs, ammonium methanesulfonate, ammonium nitrate, TMAH triflate, TMAH nfbs, TMAH methanesulfonate, TMAA, TMAN, TMAH nitrate or a combination thereof.”

Claim 1, and the related dependent claims, contain the requirement of at least one material modification agent. The current application defines a material modification agent as:

“The at least one material modification agent may include any compound or composition that can modify the coating material to improve the photolithographic, compatibility and/or physical quality of the resulting film or layered material, such as by improving the etch selectivity and/or stripping selectivity, by minimizing the fill bias, by facilitating removal and/or by improving the stability or shelf life of the material/composition. The at least one material modification agent may comprise at least one adhesion promoter, at least one pH tuning agent, at least one porogen, at least one leveling agent, at least one high-boiling solvent, at least one crosslinking agent, at least one catalyst, at least one capping agent and/or combinations thereof.

*Surprisingly, at least in some embodiments, the material modification agent (such as the at least one adhesion promoter) comprises a compound or composition that is conventionally viewed as a poisoning agent for lithography and thus avoided by the industry, but its use in the embodiments described herein improves the adhesion of the lithography composition without poisoning the composition.”*  
(emphasis added)

The Examiner contends that the Kennedy reference discloses tetrabutylammonium chloride as a phase transfer catalyst. The Examiner further contends that because the present application discloses tetrabutylammonium chloride as an ammonium salt that can be utilized as an adhesion promoter on page 21. The Examiner concludes by stating that an absorbing compound in Kennedy is exactly the same as an adhesion promoter in the present application. The Applicant could not disagree with the Examiner more on this issue. In chemical applications, certain compounds can be added in particular amounts with other compounds to perform one function and in the alternative, can be added in other amounts with yet other compounds to perform different functions. For example, in one hypothetical composition, water may be added in large amounts as a solvent for the constituents of the composition. In another composition with the same constituents, water in a much smaller amount – not as a solvent – but to promote crosslinking. Is the Examiner suggesting that because water is added in both instances that one use anticipates the other and precludes the other use from patentability? If so, this contention would be improper. One of ordinary skill in the art would not read Kennedy – where tetrabutylammonium chloride is utilized as an absorbing composition and automatically think to create a different composition or see guidance in that regard where tetrabutylammonium chloride is utilized completely differently and as an adhesion promoter. In addition, the Kennedy reference does not teach that tetrabutylammonium chloride can be used as an adhesion promoter – and therefore, Kennedy can’t possibly anticipate the current claims.

In addition, claim 1 recites that the adhesion promoter comprises APTEOS triflate, APTEOS methanesulfonate, APTEOS nitrate, APTEOS nfb, ammonium triflate, ammonium nfb, ammonium methanesulfonate, ammonium nitrate, TMAH triflate, TMAH nfb, TMAH methanesulfonate, TMAA, TMAN, TMAH nitrate or a combination thereof. Kennedy does not disclose these

compounds alone or in combination with other components, and therefore, Kennedy cannot anticipate the claims of the present application.

Based on this argument, along with others such as that discussed above, Kennedy does not anticipate claim 1 of the present application because Kennedy is missing at least one specific feature or structural recitation found in the present application, and in claim 1. Claim 1 is therefore allowable as not being anticipated by Kennedy. Further, Kennedy does not anticipate claims 3-15, 18, 26-31 and 37 by virtue of their dependency on claim 1.

Claims 1, 7, 11-13, 16-21, 26, 29-33, 41-42 are rejected under 35 USC §102(e) as being anticipated by US Patent 6677392 (Ravichandran et al). The Applicant respectfully disagrees.

Claim 1 recites:

“An absorbing composition comprising at least one inorganic-based compound, at least one absorbing compound, and at least one material modification agent, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof, wherein the at least one adhesion promoter comprises APTEOS triflate, APTEOS methanesulfonate, APTEOS nitrate, APTEOS nfbs, ammonium triflate, ammonium nfbs, ammonium methanesulfonate, ammonium nitrate, TMAH triflate, TMAH nfbs, TMAH methanesulfonate, TMAA, TMAN, TMAH nitrate or a combination thereof.”

Claim 1, and the related dependent claims, contain the requirement of at least one material modification agent. The current application defines a material modification agent as:

“The at least one material modification agent may include any compound or composition that can modify the coating material to improve the photolithographic, compatibility and/or physical quality of the resulting film or layered material, such as by improving the etch selectivity and/or stripping selectivity, by minimizing the fill bias, by facilitating removal and/or by improving the stability or shelf life of the material/composition. The at least one material modification agent may comprise at least one adhesion promoter, at least one pH tuning agent, at least one porogen, at least one leveling agent, at least one high-boiling solvent, at least one crosslinking agent, at least one catalyst, at least one capping agent and/or combinations thereof. *Surprisingly, at least in some embodiments, the material modification agent (such*

*as the at least one adhesion promoter) comprises a compound or composition that is conventionally viewed as a poisoning agent for lithography and thus avoided by the industry, but its use in the embodiments described herein improves the adhesion of the lithography composition without poisoning the composition.”*  
(emphasis added)

The Examiner contends that Ravichandran's mention of ammonium salts in Column 23 is similar to Kennedy's reference of tetrabutylammonium chloride in the previous rejection. Again, this assertion is just not correct. In chemical applications, certain compounds can be added in particular amounts with other compounds to perform one function and in the alternative, can be added in other amounts with yet other compounds to perform different functions. For example, in one hypothetical composition, water may be added in large amounts as a solvent for the constituents of the composition. In another composition with the same constituents, water in a much smaller amount – not as a solvent – but to promote crosslinking. Is the Examiner suggesting that because water is added in both instances that one use anticipates the other and precludes the other use from patentability? If so, this contention would be improper. One of ordinary skill in the art would not read Ravichandran – where ammonium salts are being utilized as crosslinkers and automatically think to create a different composition or see guidance in that regard where amine salts are utilized completely differently and as an adhesion promoter. In addition, the Ravichandran reference does not teach that amine salts can be used as an adhesion promoter – and therefore, Ravichandran can't possibly anticipate the current claims. The Ravichandran reference does not disclose the addition of at least one material modification agent that comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof, especially those material modification agents that are conventionally viewed as a poisoning agent for lithography and thus avoided by the industry.

In addition, Ravichandran does not teach all of the claimed elements of the present application. “Anticipation requires the disclosure in a single prior art reference of each element of

the claim under consideration.” *W. L. Gore & Assocs. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983) (citing *Soundsciber Corp. v. United States*, 360 F.2d 954, 148 USPQ 298, 301 (Ct. Cl.), *adopted*, 149 USPQ 640 (Ct. Cl. 1966)) Further, the prior art reference must disclose each element of the claimed invention “**arranged as in the claim**”. *Lindermann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984)(citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)). Ravichandran does not teach the addition of at least one material modification agent, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof, wherein the adhesion promoter comprises APTEOS triflate, APTEOS methanesulfonate, APTEOS nitrate, APTEOS nfbs, ammonium triflate, ammonium nfbs, ammonium methanesulfonate, ammonium nitrate, TMAH triflate, TMAH nfbs, TMAH methanesulfonate, TMAA, TMAN, TMAH nitrate or a combination thereof. Ravichandran does not disclose these compounds alone or in combination with other components, and therefore, Ravichandran cannot anticipate the claims of the present application.. Second, Ravichandran does not teach the addition of at least one material modification agent wherein at least one of those agents may conventionally considered a poisoning agent in the field of lithography. Based on this argument, along with others such as that discussed above, Ravichandran does not anticipate claim 1 of the present application because Ravichandran is lacking and/or missing at least one specific feature or structural recitation found in the present application, and in claim 1. Claim 1 is therefore allowable as not being anticipated by Ravichandran. Further, Ravichandran does not anticipate claims 7, 11-13, 18, 26 and 29-31 by virtue of their dependency on claim 1.

Claims 1 and 34-36 are rejected under 35 USC §102(a) as being anticipated by WO 2003/088344 (Leung et al). The Applicant respectfully disagrees.

Claim 1 recites:

“An absorbing composition comprising at least one inorganic-based compound, at least one absorbing compound, and at least one material modification agent, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof, wherein the at least one adhesion promoter comprises APTEOS triflate, APTEOS methanesulfonate, APTEOS nitrate, APTEOS nfb, ammonium triflate, ammonium nfb, ammonium methanesulfonate, ammonium nitrate, TMAH triflate, TMAH nfb, TMAH methanesulfonate, TMAA, TMAN, TMAH nitrate or a combination thereof.”

Claim 1, and the related dependent claims, contain the requirement of at least one material modification agent. The current application defines a material modification agent as:

“The at least one material modification agent may include any compound or composition that can modify the coating material to improve the photolithographic, compatibility and/or physical quality of the resulting film or layered material, such as by improving the etch selectivity and/or stripping selectivity, by minimizing the fill bias, by facilitating removal and/or by improving the stability or shelf life of the material/composition. The at least one material modification agent may comprise at least one adhesion promoter, at least one pH tuning agent, at least one porogen, at least one leveling agent, at least one high-boiling solvent, at least one crosslinking agent, at least one catalyst, at least one capping agent and/or combinations thereof. *Surprisingly, at least in some embodiments, the material modification agent (such*



*as the at least one adhesion promoter) comprises a compound or composition that is conventionally viewed as a poisoning agent for lithography and thus avoided by the industry, but its use in the embodiments described herein improves the adhesion of the lithography composition without poisoning the composition.”*  
(emphasis added)

The Leung reference discloses a nanoporous silica dielectric film made from the reaction of pre-polymer materials. The Examiner has not pointed out where the Leung reference teaches an absorbing composition comprising at least one absorbing compound. A nanoporous silica dielectric film is not an absorbing composition. The Examiner should be more specific as to how the nanoporous silica dielectric film in Leung anticipates the absorbing composition of the present application, because the Applicant is not drawing the same connection at all. The burden of a proper showing is first on the Examiner.

In addition, Leung does not teach all of the claimed elements of the present application. “Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration.” *W. L. Gore & Assocs. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983) (citing *Soundsciber Corp. v. United States*, 360 F.2d 954, 148 USPQ 298, 301 (Ct. Cl.), *adopted*, 149 USPQ 640 (Ct. Cl. 1966)) Further, the prior art reference must disclose each element of the claimed invention “arranged as in the claim”. *Lindermann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)). Leung does not teach the addition of at least one absorbing compound and at least one material modification agent, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof, wherein the at least one adhesion promoter comprises APTEOS triflate, APTEOS methanesulfonate, APTEOS nitrate, APTEOS nfbs, ammonium triflate, ammonium nfbs, ammonium methanesulfonate, ammonium nitrate, TMAH triflate, TMAH nfbs, TMAH methanesulfonate, TMAA, TMAN, TMAH nitrate or a combination thereof. Second, Leung does not teach the addition of at least one material modification agent

wherein at least one of those agents may conventionally considered a poisoning agent in the field of lithography. Based on this argument, along with others such as that discussed above, Leung does not anticipate claim 1 of the present application because Leung is lacking and/or missing at least one specific feature or structural recitation found in the present application, and in claim 1. Claim 1 is therefore allowable as not being anticipated by Leung.

REQUEST FOR ALLOWANCE

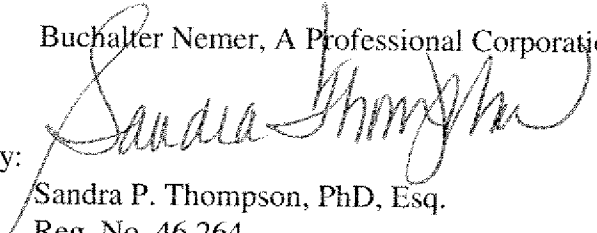
Claims 1, 3-15, 18, 26-31 and 37 are pending in this application. The applicants request allowance of all pending claims.

Respectfully submitted,

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